REMARKS

Applicants have carefully examined the Final Office Action of May 11, 2010, in which claims 1-50 are pending and claims 1-29 and 31-50 have been rejected. Claim 30 has been objected to. This paper is being filed along with a Request for Continued Examination. Applicants respectfully traverse all adverse assertions, objections, and rejections presented in the Final Office Action. With this amendment, claims 1, 3, 13, 30, 38, and 40 have been amended. No new matter has been added. Favorable consideration of the above amendments and the following remarks is respectfully requested.

Allowable Subject Matter

Applicants respectfully thank the Examiner for indicating that claim 30 would be allowable if rewritten in independent form. Accordingly, claim 30 has been rewritten as an independent claim including all of the limitations of independent claim 1 and intervening claim 29.

Claim Amendments

Claim 1 has been amended to clarify certain claim elements. The amendments are supported, for example, in Figures 6, 8, and 9.

Claim 3 has been amended to address the rejection under 35 U.S.C. §112, second paragraph, discussed in more detail below.

Claim 13 is shown as amended, but the substance of the claim remains identical to the previous response. Applicants have identified a typographical error that resulted in an improper amendment submitted in the previous response, where the deleted material was not shown. Claim 13 is listed in this response as it should have been in the previous response. No new amendment is being made, and the amendment to claim 13 submitted herein is solely to correct and/or clarify the record.

Claim 30 has been amended as discussed above, in accordance with the Examiner's statement of allowable subject matter.

Claim 38 has been amended to be a dependent of claim 1. No other substantive changes are presented.

Claim 40 has been amended to clarify the relationship among certain claim elements. The claim amendments are supported, for example, in Figures 6 and 8.

Claim Rejections – 35 U.S.C. §112

Claim 4 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In particular, the Final Office Action asserts that there is insufficient antecedent basis for the limitation "the conductive carbon". Without conceding the correctness of the rejection, Applicants have amended claim 3 to recite "a conductive carbon", thereby providing the necessary antecedent basis to claim 4, which depends therefrom. Applicants respectfully request that the rejection be withdrawn.

Claim Rejections – 35 U.S.C. §103

Claims 1-29 and 31-50 were rejected under 35 U.S.C. §103(a) as being unpatentable over Melzer et al. (U.S. Patent No. 6,280,385) in view of Zhong et al. (U.S. Published Patent Application No. 2003/0100830). After careful review, Applicants respectfully traverse the rejection.

In rejecting the claims, the Final Office Action asserts that "Melzer et al. teach an elongate shaft (fig. 1 and fig. 4a); and an electrically conductive path (element 2' and element 82) extending spirally about a portion of the shaft, and spaced from eachother, [sic] wherein the conductive path is capable of being connected to a current source (very high conductivity)." Following the above assertion, selected dependent claims were discussed. However, all of the claims, and in particular several independent claims, have not been explicitly discussed in making the rejection, even though the claim language materially differs from claim 1. Applicants respectfully point out that 37 CFR 1.104(c)(2) states:

> In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.

Furthermore, MPEP 2142 states:

> The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR,* 550 U.S. at ___ , 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval).

Additionally, in *KSR Int'l Co. v. Teleflex Inc.* (550 U.S. _ 2007), the Court stated:

> [A] patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art. Although common sense directs caution as to a patent application claiming as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the art to combine the elements as the new invention does. Inventions usually rely upon building blocks long since uncovered, and claimed discoveries almost necessarily will be combinations of what, in some sense, is already known.

See page 14 of the April 30, 2007 Slip Opinion. Applicants submit that since claims 13, 16, 18-29, 31, 38-50 have not been expressly discussed and the part of the cited reference(s) relied upon in rejecting these claims has not been clearly explained, their rejection appears to be improper.

Additionally, in rejecting the claims, the Examiner stated: "Melzer et al. teach in figure 7, a portion (element 6), disposed between coils 21 and 22, which is sufficient to read on applicant's claim language with regards to a second coil portion. The fact that element 6 of Melzer et al. is dielectric is redundant since the claim language of the invention does not specifically necessitate the second coil to be conductive" (page 4 of Final Office Action). Applicants respectfully disagree. The claim requires a conductive path defines a series of coiled portions spaced apart from each other. If coil 22 of Melzer et al. is considered to be a second coil of the series of coils spaced apart, the path is not conductive due to the interruption by element 6.

However, in the interest of advancing prosecution and without conceding the correctness of the rejection, independent claims 1 and 40 have been amended to recite "a continuous electrically conductive path…wherein the conductive path defines a series of coiled portions spaced from each other by a series of non-coiled elements extending parallel to the elongate shaft wherein a first non-coiled element is disposed between a first coiled element and a second coiled element". Accordingly, both the first and second coiled elements spaced apart by a non-coiled element must be defined by the continuous conductive path.

As discussed in the previous response, Melzer et al. do not appear to disclose a conductive path that includes first and second coiled portions spaced apart from each other with a first non-coiled element disposed therebetween. The closest that Melzer et al. may be said to come is in Figure 7, where element 6 is disposed between coils 21 and 22. However, element 6 is a dielectric and thus incapable of being part of a continuous conductive path. See column 10, line 66 through column 11, line 2. Accordingly, Melzer et al. do not appear to disclose all of the elements of claims 1 and 40, as is required to establish a *prima facie* rejection. Zhong et al. do not appear to remedy the shortcomings of Melzer et al. with respect to claims 1 and 40.

Regarding the selected dependent claims discussed in the Final Office Action, the Examiner asserted, without providing any art, that providing a fractal capacitor (claim 16) and tuning the LC circuit to the Larmor frequency of hydrogen (claim 18) would have been obvious to one of ordinary skill in the art as a routine adjustment to the system of Melzer et al. Based on the prosecution record, Applicants respectfully disagree. There is nothing in the record to suggest that either modification would have been a routine adjustment to Melzer et al. Zhong et al. do not appear to remedy the shortcomings of Melzer et al. with respect to claims 16 and 18.

Additionally, regarding claim 10, the Examiner asserted that "Melzer et al. further teach providing two electrically conductive paths (fig. 7, elements 7 and 2") having perpendicular axis with respect to one another, which defines the directions to be counter." Applicants respectfully disagree. Claim 10 recites, in part, that the conductive path includes a portion that wraps around the central longitudinal axis of the shaft in a clockwise direction and a portion that wraps around the central longitudinal axis of the shaft in a counterclockwise

direction. The "perpendicular" elements of Figure 7 do not appear to meet these requirements. Furthermore, one of skill in the art would not recognize "perpendicular" as an ordinary and customary meaning of "counter", as that term is used in the pending application and claims (MPEP 2111.01). Independent claim 42, not specifically addressed by the Final Office Action, contains similar requirements – a first portion of the path extending spirally in a first direction around the central longitudinal axis of the shaft, and a second portion of the path extending spirally in a second direction counter to the first direction around the central longitudinal axis of the shaft. Accordingly, Melzer et al. do not appear to disclose all of the elements of claims 10 and 42. Zhong et al. do not appear to remedy the shortcomings of Melzer et al. with respect to claims 10 and 42.

Regarding claims 11, 12, and 14, the Final Office Action asserts that "Melzer et al. further teach wherein the shaft comprises an electrically insulating layer between portions of the conductive path which defines a band (col. 5 lines 35-41)". Column 5, lines 35-41 are reproduced below for reference:

> The stent thus preferably consists of a material that has at least one layer of high conductivity forming the inductance and one other layer with low conductivity forming the skeleton for the actual stent function. The layer with high conductivity is cut at suitable locations to thus form various areas of the skeleton that are insulated from each other, thus forming an inductance.

As can be seen in the passage above, stent is cut such that the areas of the skeleton of the stent are insulated from each other. However, the skeleton of the stent does not form a conductive path extending spirally around the central longitudinal axis of the shaft, as required by the claim. The Examiner has cited a wire woven into the stent (element 2' – page 3 of Final Office Action) as the claimed conductive path, the stent itself asserted to be the claimed shaft. Thus, the skeleton of the stent cannot provide the required conductive path extending spirally about the shaft, nor does a layer of the stent provide an electrically insulating layer between portions of the conductive path. It is also unclear what element of the above-cited passage the Examiner is defining as a band. Independent claim 42, which was not specifically discussed in the rejection, also recites "an insulating layer between the first and second portions of the conductive path". Accordingly, Melzer et al. do not appear to disclose all of the elements of

claims 11, 12, 14, and 42, as asserted in the Final Office Action. Zhong et al. do not appear to remedy the shortcomings of Melzer et al. with respect to claims 11, 12, 14, and 42.

On page 5 of the Final Office Action, the Examiner states: "Melzer et al. do teach the use of MRI contrast agents", and Zhong is then cited as teaching various contrast agents and ultrasonic imaging means. However, Applicants can find no disclosure within Melzer et al. regarding the use of MRI contrast agents, and the Examiner has provided no indication where within the Melzer et al. reference the asserted disclosure may be found.

Independent claim 43, which has not been addressed specifically within the rejection, requires "a first plurality of portions comprising a first contrast agent; and a second plurality of portions comprising a second contrast agent different from the first contrast agent, wherein the first and second pluralities of portions are arranged in a regular pattern." Neither Melzer et al. nor Zhong et al. appear to disclose or suggest such a configuration. As discussed above, Melzer et al. do not appear to disclose the use of contrast agents, and thus cannot disclose arranging first and second pluralities of portions, which each comprise a different contrast agent, in a regular pattern. Zhong et al., who appear to disclose a number of alternative contrast agents, do not appear to disclose or suggest a device having multiple different contrast agents arranged in a regular pattern. As discussed in the previous response, Zhong et al. appear silent as to any particular arrangement of the contrast agents on the medical device, other than as a coating on the device. Therefore, the cited references, alone or in combination, do not appear to teach or suggest all of the elements of independent claim 43.

Similarly, independent claim 48, which has not been specifically addressed within the rejection, requires "a first plurality of portions comprising a first contrast agent; and a second plurality of portions capable of generating a signal void, wherein the first and second pluralities of portions are arranged in a regular pattern." Neither Melzer et al. nor Zhong et al. appear to disclose or suggest such a configuration. As discussed above, Melzer et al. do not appear to disclose the use of contrast agents, and thus cannot disclose arranging portions having a contrast agent and portions capable of generating a signal void in a regular pattern. Similarly, Zhong et al. do not appear to disclose such a configuration. As discussed in the previous response, Zhong et al. appear silent as to any particular arrangement of the contrast agents on the medical device, other than as a coating on the device. Therefore, the cited

references, alone or in combination, do not appear to teach or suggest all of the elements of independent claim 48.

For at least the reasons discussed above, independent claims 1, 38, 42, 43, and 48 are believed to be patentable over Melzer et al. and Zhong et al. Since claims 2-37, 39-41, 44-47, and 49-50 depend therefrom and add additional elements thereto, Applicants submit that these claims are also patentable over the cited references. Withdrawal of the rejection is respectfully requested.

Conclusion

Further examination and reconsideration are respectfully requested. It is respectfully submitted that the claims are now in condition for allowance, issuance of a Notice of Allowance in due course is requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,

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By their Attorney,

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